

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please ADD new claims 39-54 in accordance with the following:

1-23 (CANCELLED)

24. (PREVIOUSLY PRESENTED) A digital broadcasting system comprising:

a digital broadcasting transmitter encoding a data stream including stuff bytes at a certain location, modulating, RC-converting and transmitting the encoded data stream having known data; and

a digital broadcasting receiver receiving the encoded data stream, demodulating the encoded data stream into a baseband signal, and equalizing the demodulated signal using the detected known data,

the digital broadcasting transmitter including:

a randomizer receiving and randomizing the data stream including stuff bytes at the certain location,

a sequence provider generating the known data having a particular sequence to replace the stuff bytes,

a stuff byte replacer inserting the known data at the location of the randomized data stream where the stuff bytes are inserted,

an encoder encoding the data stream output from the stuff byte replacer for error-correction, and

a transmission part modulating, RF-converting and transmitting the encoded data stream,

the encoder including:

an RS encoder adding a parity of certain bytes to correct errors generated by channels,

an interleaver interleaving the data added with the parity in a certain pattern, and

a trellis encoder trellis-encoding the interleaved data, wherein the encoder replaces the parity added by the RS encoder with newly generated parity for the known data altered according to an initialization of the trellis encoder.

25. (CANCELLED)

26. (CANCELLED)

27. (PREVIOUSLY PRESENTED) The digital broadcasting system of claim 24, wherein the trellis encoder includes a memory element for trellis encoding operation and initializes the memory element from the location inserted with the known data for trellis-encoding.

28. (PREVIOUSLY PRESENTED) The digital broadcasting system of claim 27, further including a packet buffer for receiving and temporarily storing the data stream from the RS encoder.

29. (PREVIOUSLY PRESENTED) The digital broadcasting system of claim 28, wherein the packet buffer receives the data altered according to the initialization of the memory element from the trellis encoder and updates the stored data.

30. (PREVIOUSLY PRESENTED) The digital broadcasting system of claim 29, further including a RS re-encoder & replace parity for RS-encoding the updated data input from the packet buffer, generating the altered parity, outputting the parity to the trellis encoder and replacing the parity added by the RS encoder.

31. (PREVIOUSLY PRESENTED) The digital broadcasting system of claim 24, wherein the interleaver outputs known data inserted at the same location of a plurality of different data streams output from the RS encoder in continuous data streams.

32. (PREVIOUSLY PRESENTED) The digital broadcasting system of claim 24, wherein the transmission part modulates the data in VSB modulation.

33. (PREVIOUSLY PRESENTED) The digital broadcasting system of claim 24, wherein the digital broadcasting receiver includes:

a demodulator inserting known data of a predefined particular sequence at a location in the data stream including stuff bytes, receiving an encoded signal from the digital broadcasting transmitter and demodulating the signal into the baseband signal;

a known data detector detecting the known data from the demodulated signal; and an equalizer equalizing the demodulated signal using the detected known data.

34. (PREVIOUSLY PRESENTED) A signal processing method of a digital broadcasting system comprising:

encoding a data stream including stuff bytes at a certain location, modulating, RC-converting and transmitting the encoded data stream; and

receiving the encoded data stream, demodulating the encoded data stream into a baseband signal, detecting the known data from the demodulated signal, and equalizing the demodulated signal using the detected known data,

wherein the encoding of the data stream includes:

adding parity of certain bytes to correct errors generated by channels by RS encoding,

interleaving the data added with the parity in a certain pattern,

trellis-encoding the interleaved data, and

replacing the parity added by the RS encoding with newly generated parity for the known data altered according to an initialization of the trellis-encoding.

35. (CANCELLED)

36. (PREVIOUSLY PRESENTED) The method of claim 34, wherein the trellis encoding initializes the memory element at the location where the known data is inserted for a predetermined memory element used for trellis encoding so that the trellis encoding is performed.

37. (PREVIOUSLY PRESENTED) The method of claim 36, further including: receiving and temporarily storing the data stream generated in the RS encoding,

receiving the data altered according to the initialization of the memory element from the trellis encoding, and performing a update.

38. (PREVIOUSLY PRESENTED) The method of claim 37, further including:

RS encoding the encoded data, generating an altered parity, returning to the trellis encoding, replacing and adding the parity added in the RS encoding, and performing trellis encoding.

39. (NEW) A digital broadcast receiver, comprising:

a tuner to receive a data stream including known data; and

a processor to process the data stream using the known data included in the data stream,

wherein the data stream is transmitted from a digital broadcast transmitter comprising a known data generator to generate known data, a known data inserting unit to add the known data to the data stream, and a Trellis encoder to perform Trellis encoding using internal memories and to reset the internal memories at a predetermined time point according to a control signal for controlling Trellis reset.

40. (NEW) The receiver according to claim 39, wherein the digital broadcast transmitter causes the known data to be included in a predetermined location of the data stream according to a control signal for controlling a process of inserting known data.

41. (NEW) The receiver according to claim 39, wherein an RS encoder included in the digital broadcast transmitter compensates an RS parity of the data stream to correspond to the memory resetting.

42. (NEW) The receiver according to claim 39, wherein the processor comprises:

a demodulator;

an equalizer; and

a known data detector to detect the known data from the data stream, and provide at least one of the demodulator and the equalizer with the detected known data.

43. (NEW) The receiver according to claim 42, wherein the processor further comprises:

a Trellis decoder to perform Trellis decoding on the data stream processed by the equalizer;

a de-interleaver to perform de-interleaving on the Trellis decoded data stream; and

a Reed-Solomon (RS) decoder to perform RS decoding on the de-interleaved data stream.

44. (NEW) The receiver according to claim 43, wherein the processor further comprises:

a reverse-randomizer to perform reverse-randomizing on the RS decoded data stream.

45. (NEW) The receiver according to claim 42, wherein the known data detector detects control information regarding location or length of the known data from the data stream, and restores the known data.

46. (NEW) The receiver according to claim 39, wherein the data stream is processed to be robust against errors.

47. (NEW) A method for processing a stream of a digital broadcast receiver, the method comprising:

receiving a data stream including known data; and

processing the data stream using the known data included in the data stream,

wherein the data stream is transmitted from a digital broadcast transmitter comprising a known data generator to generate known data, a known data inserting unit to add the known data to the data stream, and a Trellis encoder to perform Trellis encoding using internal memories and to reset the internal memories at a predetermined time point according to a control signal for controlling Trellis reset.

48. (NEW) The method according to claim 47, wherein the known data are included in a predetermined location of the data stream according to a control signal for controlling a process of inserting known data.

49. (NEW) The method according to claim 47, wherein an RS encoder included in the digital broadcast transmitter compensates an RS parity of the data stream to correspond to the memory resetting.

50. (NEW) The method according to claim 47, wherein the processing comprises:
demodulating the data stream;
equalizing the data stream; and
detecting the known data from the data stream,
wherein at least one of the demodulating and equalizing is performed using the detected known data.

51. (NEW) The method according to claim 47, wherein the processing further comprises:

performing Trellis decoding on the equalized data stream;
performing de-interleaving on the Trellis decoded data stream; and
performing RS decoding on the de-interleaved data stream.

52. (NEW) The method according to claim 47, wherein the processing further comprises:

performing reverse-randomizing on the RS decoded data stream.

53. (NEW) The method according to claim 50, wherein the detecting detects control information regarding location or length of the known data from the data stream, and restores the known data.

54. (NEW) The method according to claim 47, wherein the data stream is processed to be robust against errors.